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EXAMINER	
BELLO, AGUSTIN	

ART UNIT	PAPER NUMBER
2613	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/604,182	KILLINGER, DENNIS K.	
	Examiner	Art Unit	
	Agustin Bello	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 January 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,6,12-27,30-33 and 36* is/are pending in the application.

4a) Of the above claim(s) *12-17* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,6,18-27,30-33 and 36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1 and 36 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In amended claim 1 applicant recites at least one laser adapted to generate coherent light simultaneously at multiple wavelengths. The language appears to require that a single laser have the capability of generating coherent light simultaneously at multiple wavelengths. However, the specification fails to disclose a single laser that has the ability to, by itself, generate coherent light simultaneously at multiple wavelengths.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 6, 18-27, 30-33 and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Rees (Patent No. US 6,034,760 A).

Regarding claim 1, Rees teaches at least one laser (reference numeral 12 in Figure 3) adapted to generate coherent light simultaneously at multiple wavelengths (i.e. 16a, 16b, 16c in Figure 3); at least one detector (reference numeral 87, 96, 98, 100 in Figure 3) adapted to detect said coherent light at multiple wavelengths; a plurality of external remote targets and target spatial regions fixed in line-of- sight relation to said laser and in line-of-sight relation to said detector (as seen in Figure 1); said external remote targets and target spatial regions including trees, buildings, clouds, atmospheric aerosols, and like objects that are out-of-doors relative to said laser (as seen in Figure 1); a modulating device (reference numeral 24 in Figure 3) connected in modulating relation to said optical light laser; said modulating device adapted to modulate each of said multiple wavelengths (i.e. 16a, 16b, 16c in Figure 3) so that multiple messages are transmitted simultaneously; said communication device adapted to aim said modulated light from said at least one laser at said plurality of external remote targets and target spatial regions to separate spatially different communication optical signals from one another (reference numeral 16 in Figure 1); said at least one detector adapted to demodulate light scattered by said target (reference numeral 96 in Figure 3); said at least one detector including an optical bandpass filter (reference numeral 91 in Figure 3) adapted to pass preselected wavelengths of light and reject wavelengths of light outside of said preselected wavelengths; whereby multiple messages are simultaneously transmitted along multiple wavelengths (16b, 16c in Figure 3); and whereby said multiple messages are individually detected by said at least one detector (reference numeral 87 in Figure 3).

Regarding claims 6, 18, and 19, Rees teaches a first data communication device (reference numeral 12, 24, 38 in Figure 3) adapted to transmit multiple sets of data through

multiple wavelengths (i.e. 16a, 16b, 16c in Figure 3), there being as many wavelengths as there are sets of data (i.e. each wavelength carriers a data set); a laser source (reference numeral 12 in Figure 3) modulated by said first data communication device; a transmitter telescope (reference numeral 74 in Figure 3) adapted to aim modulated light of said multiple wavelengths from said laser source to a plurality of light-reflecting multiple external remote targets (reference numeral 16 in Figure 1); said plurality of light-reflecting multiple external remote targets including trees, buildings, clouds, atmospheric aerosols, and like objects that are out-of-doors relative to said first data communication device (i.e. all of the out-of-doors elements seen in Figure 1); a second data communication device (reference numeral 87. 96, 98, 100, 104, 108, 112 in Figure 3) adapted to receive multiple sets of data carried by said multiple wavelengths (i.e. 16a, 16b, 16c in Figure 3); an optical detector (reference numeral 92 in Figure 3) connected in driving relation to said second data communication device, said optical detector adapted to generate electrical signals corresponding to detected optical signals; a receiving telescope (reference numeral 74 in Figure 3) adapted to collect modulated light reflected from said plurality of light-reflecting external remote targets at said multiple wavelengths and to deliver said modulated light to said optical detector; an optical bandpass filter (reference numeral 91 in Figure 3) connected between said receiving telescope and said optical detector; a barrier means (reference numeral 70 in Figure 3) adapted to be positioned between said first and second data communication devices, said barrier means preventing line-of-sight communication between said first and second data communication devices; said communication device being adapted to aim said modulated light from said laser at said plurality of external remote targets to separate spatially different communication optical signals from one another (reference numeral 16 in Figure 1); whereby

said transmitter telescope causes modulated light at multiple wavelengths to reflect from said plurality of light-reflecting different multiple external remote targets (reference numeral 16 in Figure 1); whereby said receiver telescope (reference numeral 74 in Figure 3) causes reflected light at said multiple wavelengths to focus on said optical detector; whereby said second data communication device receives electrical signals from said first data communication device (i.e. after reflection by atmosphere and conversion by converter 92 in Figure 3); and whereby said optical bandpass filter (i.e. filter 91 for each of the wavelengths 16a-16c in Figure 3) passes each of said multiple wavelengths to said optical detector so that multiple messages are sent simultaneously from said first data communications device to said second data communications device.

Regarding claim 20, Rees teaches a laser (reference numeral 12 in Figure 3) adapted to generate a LIDAR beam (i.e. a laser beam); a data transmitting device (reference numeral 24 in Figure 3) for modulating said laser; a transmit telescope (reference numeral 74 in Figure 3) adapted to aim said LIDAR beam at a remote target; a receiver telescope (reference numeral 74 in Figure 3) adapted to collect said LIDAR beam after said LIDAR beam has reflected from said remote target; an optical detector means (reference numeral 92 in Figure 3) in communication with said receiver telescope, said optical detector means adapted to generate electrical signals upon receiving reflected light from said receiver telescope; a data receiving device (reference numeral 112 in Figure 3) adapted to receive electrical signals from said optical detector; said LIDAR communication system being adapted to aim said modulated light from said LIDAR beam at a plurality of external remote targets and target spatial regions to separate spatially different communication optical signals from one another (reference numeral 16 in Figure 1);

said external remote targets and target spatial regions including trees, buildings, clouds, atmospheric aerosols, and like objects that are out-of-doors relative to said laser (i.e. the environment shown in Figure 1); whereby said data receiving device receives data from said data transmitting device even when said data receiving device is positioned in a location distant from said data transmitting device (i.e. the receiver receives continually receives the transmitted light signal) and when at least one obstacle prevents line-of-sight communication between said data transmitting device and said data receiving device (i.e. the objects in the environment that reflect the laser beam).

Regarding claim 21, Rees teaches an electrical signal conditioner (reference numeral 26 in Figure 3) disposed in electrical communication between said data transmitting device and said laser, said electrical signal conditioner adapted to condition signals from said data transmitting device.

Regarding claim 22, Rees teaches an electrical signal conditioner (reference numeral 96, 98, 100, 104, 108 in Figure 3) disposed in electrical communication between said optical detector and said data receiving device, said electrical signal conditioner adapted to condition electrical signals from said optical detector.

Regarding claim 23, Rees teaches an optical bandpass filter (reference numeral 91 in Figure 3) between the receiver telescope and said optical detector (reference numeral 92 in Figure 3).

Regarding claims 24 and 26, Rees teaches multiple optical wavelengths (i.e. 16a-16c in Figure 3) for communication of different communication signals simultaneously when the same external remote target is used as a common target for multiple communication devices.

Regarding claims 25 and 27, Rees teaches multiple optical wavelengths (i.e. 16a-16c in Figure 3) for communication of different communication signals simultaneously when the same external remote target is used as a common target for LIDAR communication devices (i.e. a laser).

Regarding claims 30, 31, 32, and 33, Rees teaches an optical signal transmitted to a remote external target (reference numeral 16 in Figure 1) wherein the backscattered optical signal is detected simultaneously by multiple telescope receivers positioned at different locations (i.e. as seen in Figure 2 and 3).

Regarding claim 36, Rees teaches the communication device of claim 1, further comprising: a plurality of external remote targets including atmospheric back scatter in non-line-of- sight relation to said detector (i.e. any of the atmospheric backscatter shown in Figure 1 that are non-line-of sight with detector 10 in Figure 1); said detector adapted to detect multipath backscatter from said multiple backscatter spatial target regions (reference numeral 16 in Figure 1; also 16a, 16b, 16c in Figure 3).

Response to Arguments

5. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection. Applicant's amendment has significantly changed the scope of the claimed invention from allowing the laser to reside as part of the environment to requiring the transmitter to be entirely outside of the environment. Likewise, applicant has further defined that the remote targets are in an environment that is external to the environment of the communication device, as opposed to allowing the remote object to form part of the environment that is external to the environment of said communication device. Furthermore,

applicant has further defined that it is the first communication device and not the second communication device that aims the modulated light from a laser and not a broader laser source at said remote targets. Moreover, applicant's amendment has required a new 112 rejection as noted above.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (571) 272-3026. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Agustin Bello/

Primary Examiner, Art Unit 2613